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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/009,294	01/20/1998	RANDELL L. MILLS	911319	7247

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EXAMINER
KALAFUT, STEPHEN J

ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 06/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/009,294	MILLS, RANDELL L.	
	Examiner	Art Unit	
	Stephen J. Kalafut	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 August 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-300* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-300* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All. b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *41, 44* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/16/02 has been entered.

Claims 1-300, for reasons of record as applied to original and previously added claims 1-299, are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility. See paper no. 27, paragraph no. 3.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-300, for reasons of record as applied to original and previously added claims 1-299, are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. See paper no. 27, paragraph no. 4.

Applicant's arguments filed 8/5/02 have been fully considered but they are not persuasive.

Applicant argues that the articles submitted after the Final Office Action (paper no. 34) confirm a reaction which transforms atomic hydrogen from its normal ground state (n=1) to states with lower energies, with fractional quantum numbers. Applicant calls a hydrogen atom in a lower energy state "hydrino". This is not persuasive for reasons which will be stated below.

Applicant argues that various spectral phenomena, such as extreme ultraviolet (EUV) emission lines, show the existence of hydrinos. This is not persuasive because the energies alleged by applicant do not correspond to those expected from the equation given for the hydrino energy states. According to applicant, on page 5 of the present application, the binding energy levels for a hydrogen atom are given by the equation Binding Energy = -13.6 eV / $(1/p)^2$, where p is integer. Thus, n=1/p. When p=1, the hydrogen is in its ground state of n=1. Calculating the energy levels for p equaling 2, 3, and 4 would yield the values -13.6 eV / $(1/2)^2$, -13.6 eV / $(1/3)^2$, and -13.6 eV / $(1/4)^2$, respectively. These may be simplified to -13.6 eV / (1/4), -13.6 eV / (1/9), and -13.6 eV / (1/16), and then -13.6 (4) eV, -13.6 (9) eV, and -13.6 eV (16). When calculated fully, these would be -54.4 eV, -122.4 eV, and -217.6 eV. The energy level for p=5 would be -340.0 eV. Applicant expresses these values as multiples of q x 13.6 eV. The energy levels for p=1 through p=5 would thus respectively correspond to values for q of -1, -4, -9, -16 and -25. The energy transitions between p to the next higher p, starting with p going from 1 to 2, would correspond to q values of 3, 5, 7 and 9, each being an odd number. The lowest even value of q would be 8, where p goes from 1 to 3. Other possible even values of q would include 12 (p goes from 2 to 4) and 16 (p goes from 3 to 5). Thus, the q values of 2, 4 and 6 are precluded by applicant's theory, while included in applicant's observations. Conversely, applicants theory predicts the q value of 5, which is absent from the observations. Applicant makes numerous

references to the value of q=2, in other words, 27.2 eV. However, none of the energy transitions predicted by his own theory involve this particular value. It is noted that applicant has asserted that the transition from the ground state to lower energy states is a *non-radiative* energy transfer, but then argues that these transitions are evidenced by the spectra of radiation. It is also noted that as p continues to increase, the radius of the electron orbital decreases by smaller amounts, but the energy released by each successive transition is greater, which would lead toward infinitely larger energy being produced from infinitely smaller spaces.

Applicant argues that the existence of hydrinos within plasmas is shown by Balmer line broadening. This is not persuasive because Balmer line broadening may result from a number of phenomena other than any transitions of hydrogen to a below ground energy state. According to the internet article "Stellar Spectra and the Secrets of Starlight", Balmer line broadening may occur due to turbulence or variations of pressure (pages 6 and 7). According to the internet article by Bårmann *et al.*, Balmer line broadening may occur due to higher degrees of ionization (page 3). Since plasma is an ionized state of matter, Balmer line broadening would thus be expected to occur therein. It is also noted that for a hydrogen atom to ionize and become part of a plasma, it must have its electron removed, which would be the exact opposite of hydrino formation, since this removal would require an increase in the energy of the electron. This would also be true of naturally occurring plasmas such as the sun and other stars, which are powered by the energy arising from nuclear fusion.

Applicant argues that observations of outer space would show the existence of hydrinos. This is not persuasive because the vacuum of space has been shown to produce enlarged, rather than shrunken, hydrogen atoms. According to the internet article by Gulyaev, transitions

between n=91 and n=90 have been detected (page 6). Such atoms are impossible on earth, because even vacuums produced in a laboratory are too dense to allow them to survive (page 5). The emptiness of space would also make collisions between ordinary hydrogen and the types of atoms needed (according to applicant) to produce the transition to a hydrino very rare.

Applicant argues that quantum theory has "far-fetched and disproved predictions". It is submitted that quantum theory, while containing some enigmas that remain unresolved (Tegmark *et al.*, page 69, cited in the Attachment to the Final Rejection, paper no. 18), has still been the most precisely tested and most successful theory in the history of science (Kneppler *et al.*, page 893, also cited in the Attachment to the Final Rejection). Quantum mechanics is not merely a theory, but is the basis for various inventions such as semiconductors, lasers and magnetic resonance imaging (Tegmark *et al.*, page 69). Quantum mechanics also predicts that under certain conditions, non-local (faster than light) influences are possible, and that these have been verified by experiment, according to the internet article by Dennis, page 1. Applicant argues that much of his evidence has been ignored, but would have the Office overrule over 100 years of work, both theoretical and experimental, by the numerous physicists who have contributed to the science of quantum mechanics, as shown by the articles submitted with the previous two office actions, paper nos. 27 and 34.

Further evidence against applicant's theory is shown in the internet articles by Krieg and Zimmerman. Krieg shows through ordinary differential calculus that the ground state is a minimum, which would exhibit the Bohr radius (page 3), where de/dr=0 (e=energy, r=radius). By contrast, as noted above, the energy states alleged by applicant have no minimum, but would rise to infinity as r becomes infinitely smaller. Zimmerman (pages 3 and 4) discusses a problem

with applicant's model of an electron moving through space as a spinning disk, with the spin axis aligned with the direction of the electron's motion. This model is shown in applicant's book *The Grand Unified Theory of Classical Quantum Mechanics*, on page 166. In a beam of electrons behaving according to applicant's theory, all moving in the same direction, all of the electrons would be polarized in this same direction. However, the electrons in observed beams are most of the time randomly polarized (Zimmerman, page 3). Thus, while randomly polarized electron beams are the normal reality, applicant's theory implies that they should not exist.

Applicant argues that the Office should consider the material provided by applicant "article-by-article". Since many of the articles deal with subject matter common thereto, such an analysis would be very repetitive and redundant. For examples, as pointed out by applicant, reference numbers 3, 7, 16, 21, 35-38 and 43 all refer to glow discharges of helium with 2% hydrogen (pages 5 and 6 of the most recent amendment), and where the values of q equaling 1, 2, 3, 4, 6, 7, 8, 9, 11 and 12. This action is instead intended to address applicant's arguments themselves, and has pointed out where applicant's experimental data has instead contradicted his theory. Applicants arguments refer to a Dr. Robert Park, and his "hostile statements against BlackLight" (page 27 of the amendment). None of the references cited by the Office of record in the present application are authored by anyone named Robert Park.

Applicant's Prior Art submissions have been made of record, to the extent that the cited documents have been received.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is (703) 308-0433. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (703) 308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

sjk
June 4, 2003

STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP 1700